

## PCT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Crystal Plaza 2  
Washington, DC 20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 12 April 1999 (12.04.99)	
<b>International application No.</b> PCT/US98/16521	<b>Applicant's or agent's file reference</b> 8444-INT
<b>International filing date</b> (day/month/year) 10 August 1998 (10.08.98)	<b>Priority date</b> (day/month/year) 14 August 1997 (14.08.97)
<b>Applicant</b> PARKER, Michael, T. et al	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

02 March 1999 (02.03.99)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

G. Bähr

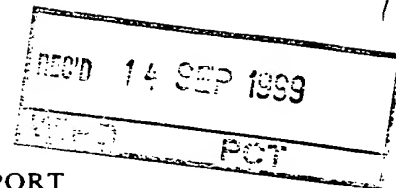
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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



<b>Applicant's or agent's file reference</b> 8444-INT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
<b>International application No.</b> PCT/US98/16521	<b>International filing date (day/month/year)</b> 10 AUGUST 1998	<b>Priority date (day/month/year)</b> 14 AUGUST 1997
<b>International Patent Classification (IPC) or national classification and IPC</b> IPC(6): G01R 23/00 and US Cl.: 702/76		
<b>Applicant</b> HENDRY MECHANICAL WORKS		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.  
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
 These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

<b>Date of submission of the demand</b>  02 MARCH 1999	<b>Date of completion of this report</b>  07 JUNE 1999
<b>Name and mailing address of the IPEA/US</b> Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231  <b>Facsimile No.</b> (703) 305-3230	<b>Authorized officer</b> <div style="text-align: center;">                  THOMAS PEESO             </div> <b>Telephone No.</b> (703) 305-9784

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/16521

**I. Basis of the report**

1. This report has been drawn on the basis of *(Substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments)*:

- ☒ the international application as originally filed.
- ☒ the description, pages 1-47 , as originally filed.  
pages NONE , filed with the demand.  
pages NONE , filed with the letter of \_\_\_\_\_  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☒ the claims, Nos. 1-83 , as originally filed.  
Nos. NONE , as amended under Article 19.  
Nos. NONE , filed with the demand.  
Nos. NONE , filed with the letter of \_\_\_\_\_  
Nos. \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☒ the drawings, sheets/fig 1-6 , as originally filed.  
sheets/fig NONE , filed with the demand.  
sheets/fig NONE , filed with the letter of \_\_\_\_\_  
sheets/fig \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

2. The amendments have resulted in the cancellation of:

- ☒ the description, pages none
- ☒ the claims, Nos. none
- ☒ the drawings, sheets/fig none

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box Additional observations below (Rule 70.2(c)).

4. Additional observations, if necessary:

NONE

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/16521

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>1-83</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-83</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-83</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

Claims 1-83 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest the following claimed features.

As in claim 1, selecting a fractal subset of the arc signature characterized by relatively long travel along the monitored circuit and low cross-induction among neighboring circuits.

As in claim 23, processing portions of the arc signature in two paths out of phase with each other.

As in claim 24, treating the arc signature as a modulated carrier having a modulation indicative of the electric arc.

As in claim 29, a chaotic wideband signal detector having a detector input for the fractal subset of the arc signature coupled to the output of the electric filter.

As in claim 54, an inverting amplifier having an input connected to the output of the electric filter, and having an amplifier output; a non-inverting amplifier having an input connected to the output of the electric filter, having an amplifier output, and being in parallel to the inverting amplifier, and a chaotic wideband signal detector having a detector input coupled to the amplifier outputs of the inverting and non-inverting amplifiers.

As in claim 55, a modulated carrier detector having an arc signature input and a carrier modulation output.

As in claim 58, combined modulated carrier detectors having arc signature inputs and a combined carrier modulation output.

As in claim 66, establishing in response to the monitoring a record of sparks occurring at the first location and a record of sparks occurring at the distant second location aboard the aircraft.

As in claim 77, a spark monitor at a first location aboard the aircraft, having a first spark signal output; a spark monitor at a second location aboard the aircraft distant from the first location, having a second spark signal output; and a spark signal recorder connected to the first and second spark signal outputs.

(Continued on Supplemental Sheet.)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/16521

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):**

NEW CITATIONS

NONE

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/16521

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G01R 23/00

US CL : 702/76

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 702/76

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,353,233 A (OIAN et al) 04 October 1994, col. 8, lines 43-50, col. 8, lines 60-64), col. 10, lines 51-55),	1-3, 23, 24-30

☐

Further documents are listed in the continuation of Box C.

☐

See patent family annex.

* Special categories of cited documents:	*T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A document defining the general state of the art which is not considered to be of particular relevance	*X	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*B earlier document published on or after the international filing date	*Y	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z	document member of the same patent family
*O document referring to an oral disclosure, use, exhibition or other means		
*P document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

07 NOVEMBER 1998

Date of mailing of the international search report

29 DEC 1998

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT

Authorized officer

THOMAS REES